

**Notice of Allowability**

Application No.

10/531,236

Examiner

Michael Maskell

Applicant(s)

GORBUNOV, BORIS ZACHAR

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communications filed 12/17/2007.
2. ☒ The allowed claim(s) is/are 41-49, 51-61 and 63-74.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other \_\_\_\_\_

  
JACK BERMAN  
PRIMARY EXAMINER

## **DETAILED ACTION**

### ***Claim Objections***

Claim 49 has been amended as suggested, and the corresponding objection is withdrawn. The objections to claims 43, 46, 52, 60, and 61 are rendered moot by the allowance of the claims from which they depend as described below.

### ***Claim Rejections - 35 USC § 112***

Claim 50 has been cancelled, rendering the rejection of claim 50 moot. The amendment of claims 58 and 59 satisfies the requirements of 35 U.S.C. 112, second paragraph, and the corresponding rejections are withdrawn.

### ***Allowable Subject Matter***

1. Claims 41-49, 51-61 and 63-74 allowed.
2. The following is an examiner's statement of reasons for allowance: Independent claims 41 and 55 each now contain the limitation that the apparatus *does not use a vacuum*. In regards to claim 41, Zhang's teachings require a vacuum to function, so its combination with Eiceman cannot result in an apparatus that does not use a vacuum. In regards to claim 55, Bassi discloses an ultra-high vacuum chamber in Fig. 3, and therefore cannot anticipate the limitation that the apparatus does not use a vacuum. As pointed out in pages 15-17 of the applicant's reply dated 12/17/2007, the two types of detection means common in the art, a Faraday cup and an electron multiplier, are not compatible with the limitations of claims 41 and 55. In particular, a Faraday cup is incapable of single-particle counting, and an electron multiplier is incapable of operation without a vacuum. This limits the counting means to atmospheric-pressure single

particle counting means such as the optical particle counter used in Pourprix (U.S. Patent 5,621,208); however there is no anticipation in the prior art of using such a means to count ions in a gaseous sample (Pourprix teaches counting aerosol particles independently, and not as a means for determining a number of ions that have interacted with these aerosol particles). There is no teaching found in the prior art of a method or apparatus for counting individual ions via charge transfer to uncharged particles having a mass greater than said ions which are then themselves counted, and which does not use a vacuum.

3. Claims 42-49 and 51-54 are allowable by virtue of their dependence on allowable claim 41.

4. Claims 56-61 and 63-74 are allowable by virtue of their dependence on allowable claim 55.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Maskell whose telephone number is 571/270-3210. The examiner can normally be reached on Monday-Friday 8AM-5PM EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571/272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:  
10/531,236  
Art Unit: 2881

Page 4

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Michael Maskell  
04 January 2008

  
JACK BERMAN  
PRIMARY EXAMINER